Forest Health Protection
Pacific Southwest Region

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To: Tom Contreras, Forest Supervisor, Mendocino National Forest

Subject: Insect and disease evaluation of plantations in the Buttermilk LSR for Joe Miranda (FHP Report N09-11)

At the request of Joe Miranda, Assistant Culturist, Mendocino National Forest, Cynthia Snyder, Forest Health Protection (FHP) Entomologist and Pete Angwin, FHP Plant Pathologist, conducted a field evaluation of plantations within the Buttermilk LSR Project on August 4, 2009. The objective of the visit was to evaluate the current forest health conditions within the stands, discuss what influence these conditions have on stand management objectives and provide recommendations as appropriate. Nancy Mulligan, Vegetation Management Specialist, and Jesse Rosenquist, Silviculturist, joined us in the field.

Background

The Mendocino National Forest has proposed 197 acres of thinning in plantations located within the Buttermilk Late Successional Reserve (LSR). Plantations were planted in 1992 after the Black Willow Timber Sale. Most are mixed conifer type: ponderosa pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii*), incense cedar (*Calocedrus decurrens*), sugar pine (*Pinus lambertiana*) and white fir (*Abies concolor*) with residual mature ponderosa pine with diameters of about 12 inches at breast height (4½ feet) and some residual black oak. The greatest exception was stand 117-409, which was planted in 1994 with a brush release in 1997.

Buttermilk is a functional LSR that is considered highly prone to fire. The treatment recommendations are to incorporate, as much as possible, these plantations into the Strategically Placed Area Treatments (SPLATs) system, an approach to fire management that integrates the most successful ways of changing potential fire behavior on a landscape level, incorporating precommercial thinning (PCT), mastication and underburning.

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Stands would be hand thinned to approximately a 20 foot spacing with a clumpy distribution promoting a mix of conifer species. The larger, healthier conifers especially sugar pine, Douglas-fir and incense cedar would be preserved to promote insect and disease resilience and push stands toward a late successional state. Large residuals and hardwoods would also be preserved for wildlife diversity in the LSR outline. Piling and burning would follow.

Observations

Stand conditions are typically very dense (Figures 1). In areas more prone to high winds, breakage and stem deformities were observed and thought to be caused by off-site plantings (Figure 2). Some typical ponderosa pine plantation pests were common among the stands we visited including Sequoia pitch moth (*Synanthedon sequoiae*) and pine shoot borer (*Eucosma sonomana*). True mistletoe was found in oak at unit 117-437 and fir engraver beetle (*Scolytus ventralis*) was observed in residual mature white fir in unit 118-215 (Figure 3).

Figure 1. Overstocked ponderosa pine plantation

Figure 2. Wind and snow damage possibly caused by off-site planting.

Figure 1. Fir engraver beetle topkill in residual white fir behind ponderosa pine plantation.

Discussion and Recommendations

Late Successional Reserves are managed to protect and enhance conditions of late successional and old growth forest ecosystems, which serve as habitat for related

species including the northern spotted owl. Important structural attributes include live old growth trees, standing snags, fallen logs on the forest floor and in streams, multiple canopy layers, canopy gaps and patchy understory. While these stands do not currently meet these conditions, the management proposal would aid in their transition to old growth while reducing the potential for bark beetle attack by improving the vigor of residual trees.

The stands are becoming very dense, and the risk to attack by western and mountain pine beetle (*Dendroctonus brevicomis* and *Dendroctonus ponderosae*, respectively) is increasing fast. The risk to crown fire and mortality from drought is likewise increasing. I support the District plan to precommercially thin the plantations, leaving only the healthiest, most vigorous. Stocking levels will be reduced to about 80 trees per acre (20 foot spacing) and fuels will be hand piled and burned. These treatments will be sufficient to reduce bark beetle risk and meet Regional Density Management policy.

If you have any questions regarding this report and/or need additional information please contact Cynthia Snyder at 530-226-2437 or Pete Angwin at 530-226-2436.

/s/ Cynthia Snyder

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cc: Nancy Mulligan, Jesse Rosenquist, Joe Miranda, Pete Angwin, Sheri Smith, Julie Lydick and Phil Cannon